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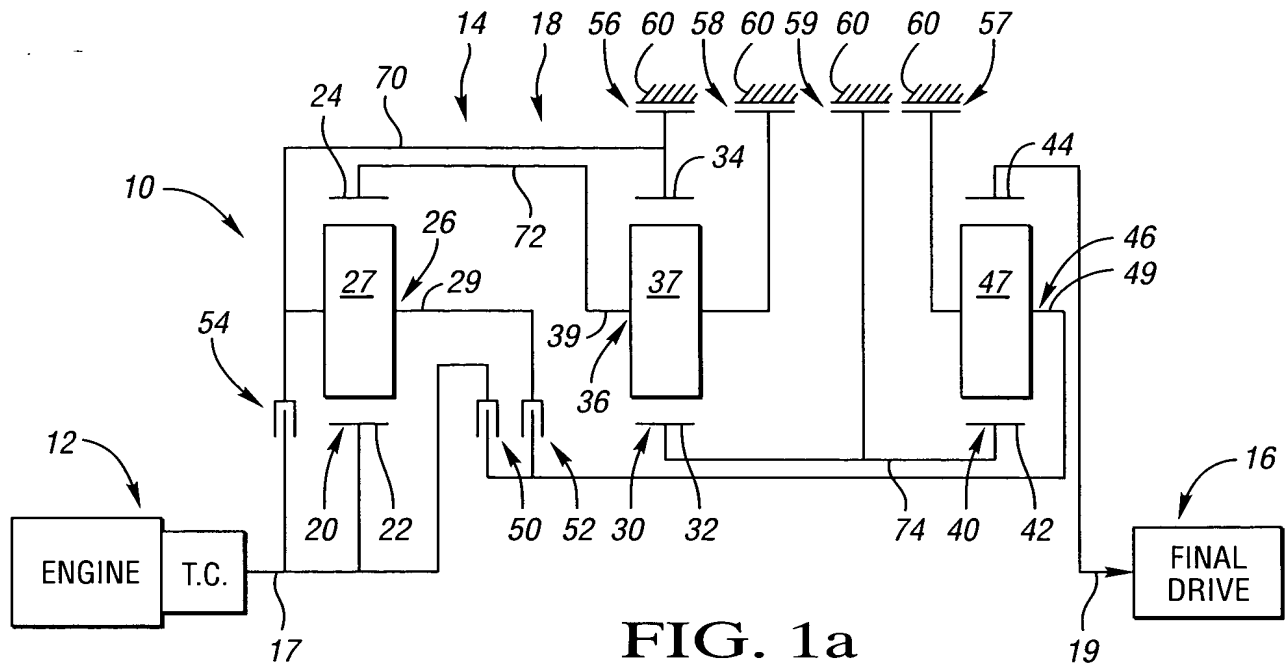


FIG. 1a

FIG. 1b

	RATIOS	50	52	54	56	57	58	59
REVERSE 1	-2.74			X		X		
NEUTRAL	0.00					X		
1	5.26					X	X	
2	2.67		X			X		
3	1.88		X				X	
4	1.45		X					X
5	1.00	X	X					
6	0.73	X						X
7	.64	X					X	
8	0.58	X			X			

(X = ENGAGED CLUTCH)

TOOTH RATIO:  $\frac{N_{R1}}{N_{S1}} = 3.01$ ,  $\frac{N_{R2}}{N_{S2}} = 2.09$ ,  $\frac{N_{R3}}{N_{S3}} = 2.74$

RATIO SPREAD	9.15
RATIO STEPS	
REV/1	-0.52
1/2	1.97
2/3	1.42
3/4	1.30
4/5	1.45
5/6	1.36
6/7	1.14
7/8	1.12



	RATIOS	150	152	154	156	157	158	159
REVERSE 2	-4.30			X	X			
REVERSE 1	-1.12			X			X	
NEUTRAL	0.00				X			
1	8.62				X	X		
2	4.11		X		X			
3	2.24		X				X	
4	1.59		X					X
5	1.00	X	X					
6	0.81	X						X
7	0.74	X				X		
8	0.60	X					X	

(X = ENGAGED CLUTCH)

$$\frac{\text{RING GEAR}}{\text{SUN GEAR}} \text{ TOOTH RATIO: } \frac{N_{R1}}{N_{S1}} = 2.00, \frac{N_{R2}}{N_{S2}} = 1.86, \frac{N_{R3}}{N_{S3}} = 2.00$$

RATIO SPREAD	14.36
RATIO STEPS	
REV2/1	-0.50
1/2	2.10
2/3	1.83
3/4	1.41
4/5	1.59
5/6	1.23
6/7	1.09
7/8	1.24

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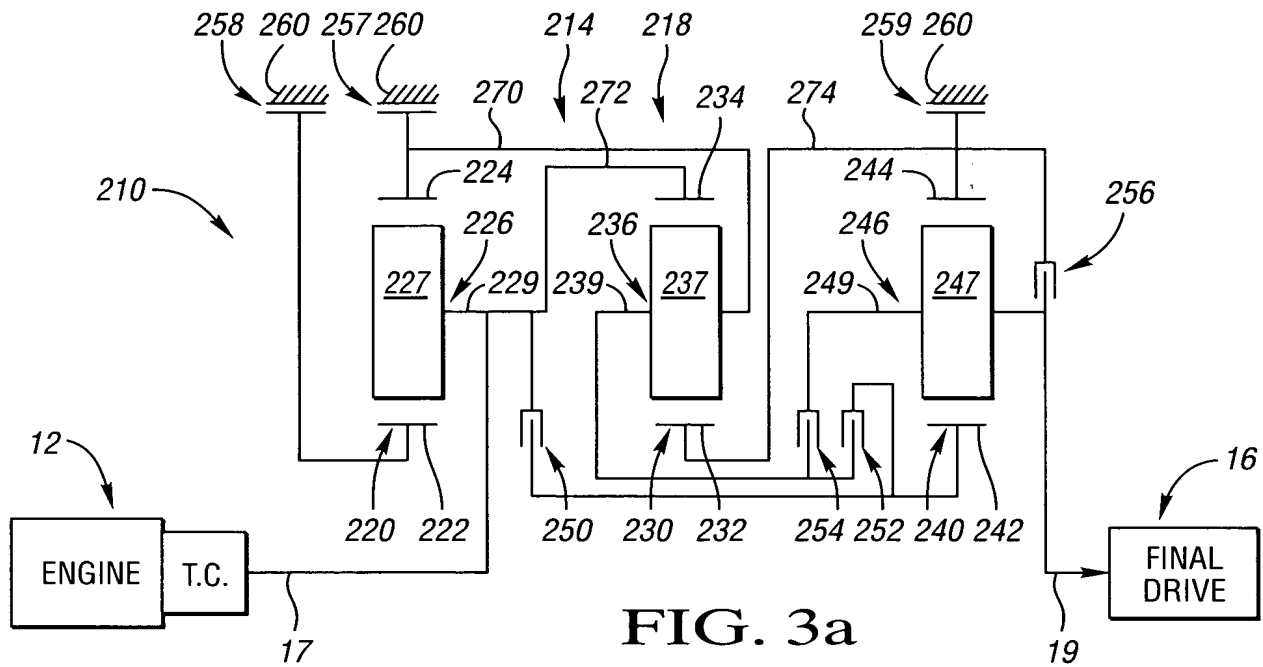


FIG. 3a

FIG. 3b

	RATIOS	250	252	254	256	257	258	259
REVERSE 3	-1.73	X				X		
REVERSE 2	-1.02		X			X		
REVERSE 1	-0.61				X	X		
NEUTRAL	0.00							X
1	4.04		X					X
2	2.50	X						X
3	1.61			X				X
4	1.00	X		X				
5	0.65			X			X	
6	0.54	X					X	
7	0.49		X				X	
8	0.42				X		X	

(X = ENGAGED CLUTCH)

$\frac{\text{RING GEAR}}{\text{SUN GEAR}}$  TOOTH RATIO:  $\frac{N_{R1}}{N_{S1}} = 1.87$ ,  $\frac{N_{R2}}{N_{S2}} = 1.63$ ,  $\frac{N_{R3}}{N_{S3}} = 1.50$

RATIO SPREAD	9.72
RATIO STEPS	
REV3/1	-0.43
1/2	1.61
2/3	1.55
3/4	1.61
4/5	1.54
5/6	1.20
6/7	1.12
7/8	1.17

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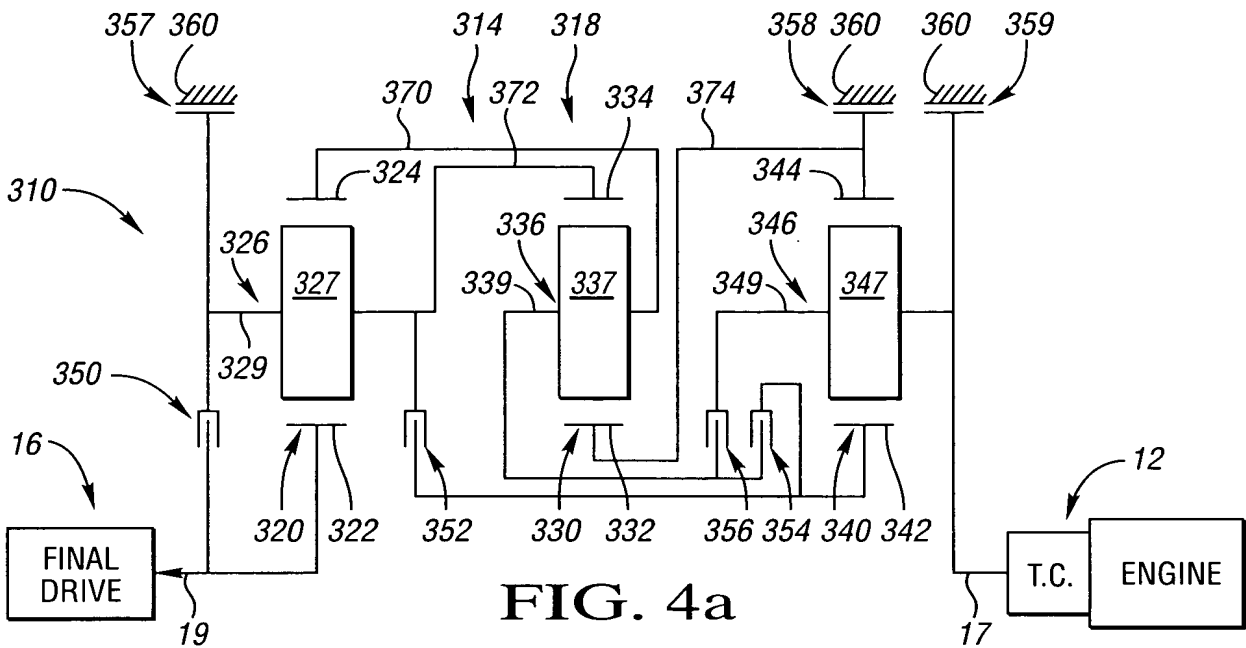


FIG. 4a

FIG. 4b

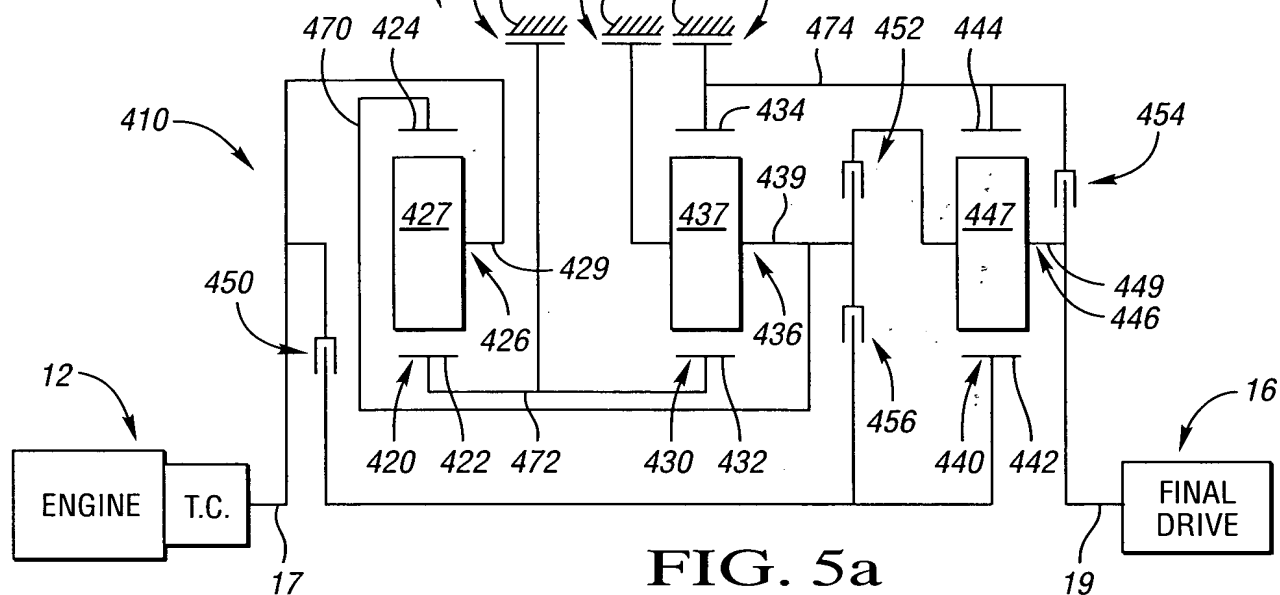
	RATIOS	350	352	354	356	357	358	359
REVERSE 2	-2.50	X						X
REVERSE 1	-0.66			X		X		
NEUTRAL	0.00							X
1	5.91					X		X
2	3.58				X	X		
3	2.55				X			X
4	1.77				X		X	
5	1.00		X		X			
6	0.70		X				X	
7	0.63		X					X
8	0.50			X			X	
9	0.42			X				X

(X = ENGAGED CLUTCH)

RING GEAR  
SUN GEAR

TOOTH RATIO:  $\frac{N_{R1}}{N_{S1}} = 1.51$ ,  $\frac{N_{R2}}{N_{S2}} = 2.56$ ,  $\frac{N_{R3}}{N_{S3}} = 2.50$

RATIO SPREAD	14.01
RATIO STEPS	
REV2/1	-0.42
1/2	1.65
2/3	1.40
3/4	1.44
4/5	1.77
5/6	1.42
6/7	1.11
7/8	1.26
8/9	1.19



	RATIOS	450	452	454	456	457	458	459
REVERSE 3	-2.46	X						X
REVERSE 2	-1.35				X			X
REVERSE 1	-0.90			X				X
NEUTRAL	0.00						X	
1	5.71				X		X	
2	3.00	X					X	
3	1.90		X				X	
4	1.00		X		X			
5	0.70		X			X		
6	0.62	X				X		
7	0.57				X	X		
8	0.52			X		X		

(X = ENGAGED CLUTCH)

$$\frac{\text{RING GEAR}}{\text{SUN GEAR}} \text{ TOOTH RATIO: } \frac{N_{R1}}{N_{S1}} = 2.28, \frac{N_{R2}}{N_{S2}} = 2.97, \frac{N_{R3}}{N_{S3}} = 2.00$$

RATIO SPREAD	10.99
RATIO STEPS	
REV3/1	-0.43
1/2	1.90
2/3	1.58
3/4	1.90
4/5	1.44
5/6	1.12
6/7	1.09
7/8	1.09

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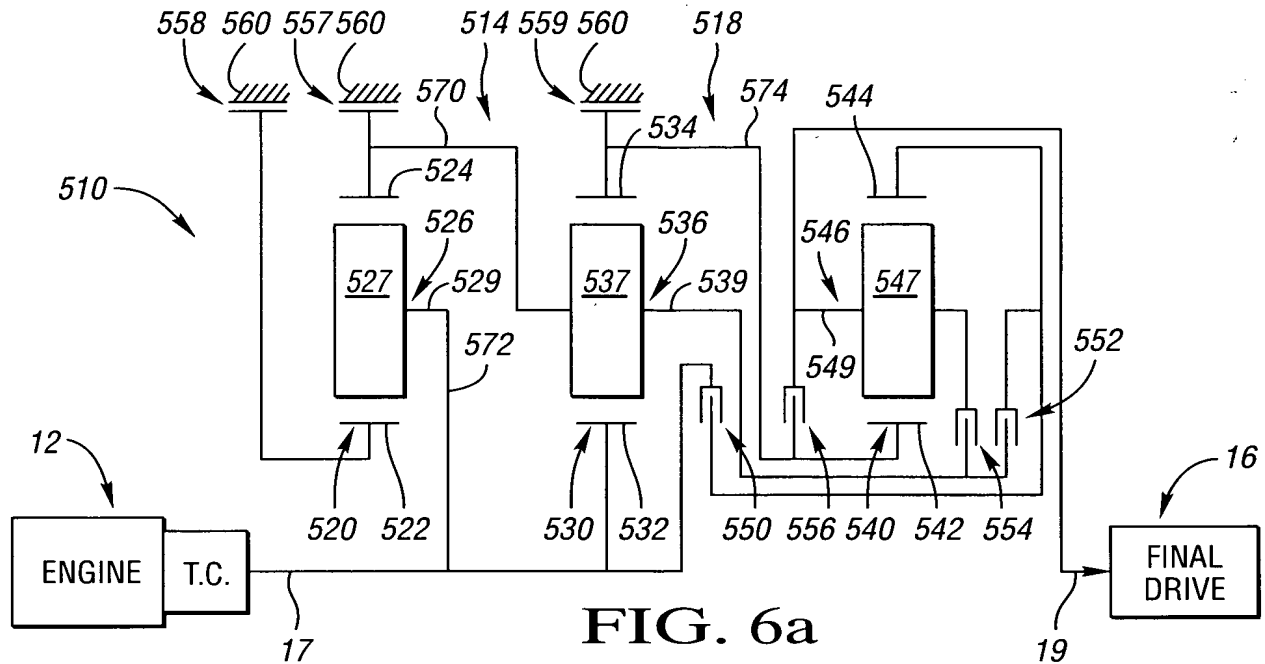


FIG. 6a

FIG. 6b

	RATIOS	550	552	554	556	557	558	559
REVERSE 2	-4.91		X			X		
REVERSE 1	-1.51				X	X		
NEUTRAL	0.00		X					
1	3.62		X					X
2	2.51			X				X
3	2.04	X				X		
4	1.44	X						X
5	1.00	X		X				
6	0.75	X					X	
7	0.60			X			X	
8	0.56		X				X	
9	0.48				X		X	

(X = ENGAGED CLUTCH)

$\frac{\text{RING GEAR}}{\text{SUN GEAR}}$  TOOTH RATIO:  $\frac{N_{R1}}{N_{S1}} = 1.51$ ,  $\frac{N_{R2}}{N_{S2}} = 1.51$ ,  $\frac{N_{R3}}{N_{S3}} = 2.26$

RATIO SPREAD	7.61
RATIO STEPS	
REV1/1	-0.42
1/2	1.44
2/3	1.74
3/4	1.44
4/5	1.34
5/6	1.24
6/7	1.08
7/8	1.17

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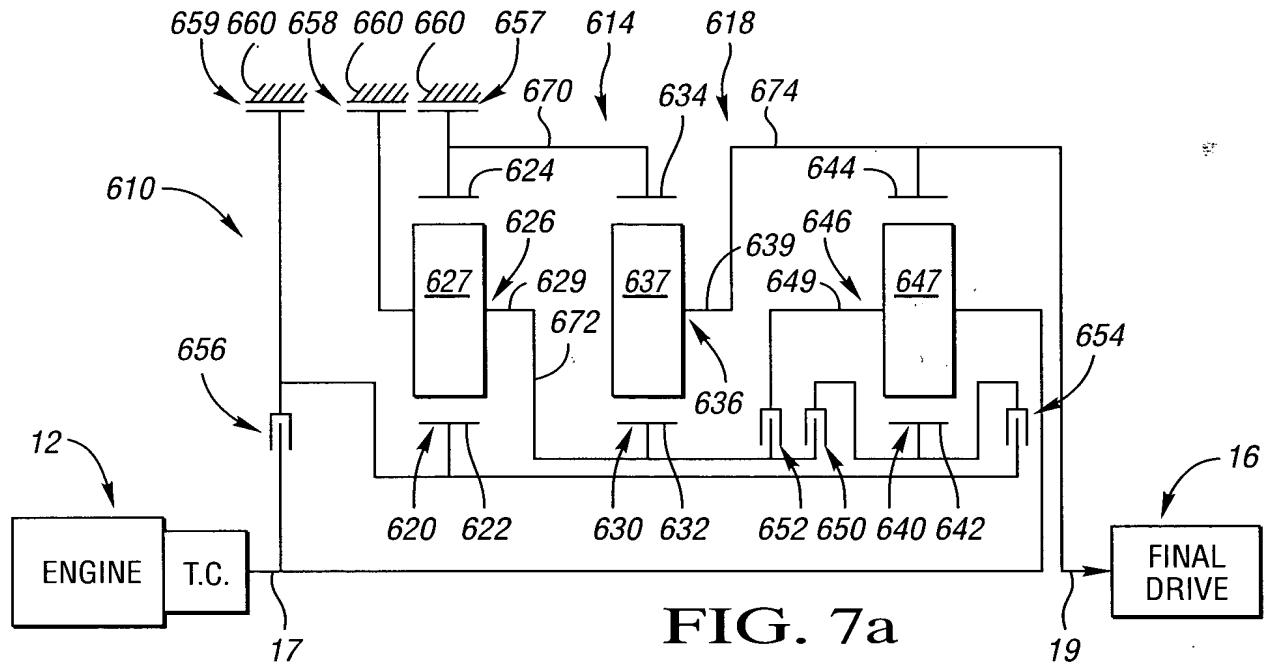


FIG. 7a

FIG. 7b

	RATIOS	650	652	654	656	657	658	659
REVERSE 2	-3.33				X		X	
REVERSE 1	-0.73			X			X	
NEUTRAL	0.00				X			
1	7.48				X	X		
2	3.59			X		X		
3	2.50		X			X		
4	1.60	X				X		
5	1.00	X	X					
6	0.91	X						X
7	0.70		X					X
8	0.60			X				X

(X = ENGAGED CLUTCH)

$\frac{\text{RING GEAR}}{\text{SUN GEAR}}$  TOOTH RATIO:  $\frac{N_{R1}}{N_{S1}} = 2.00$ ,  $\frac{N_{R2}}{N_{S2}} = 1.50$ ,  $\frac{N_{R3}}{N_{S3}} = 1.50$

RATIO SPREAD	12.46
RATIO STEPS	
REV2/1	-0.44
1/2	2.08
2/3	1.44
3/4	1.56
4/5	1.60
5/6	1.10
6/7	1.18
7/8	1.28

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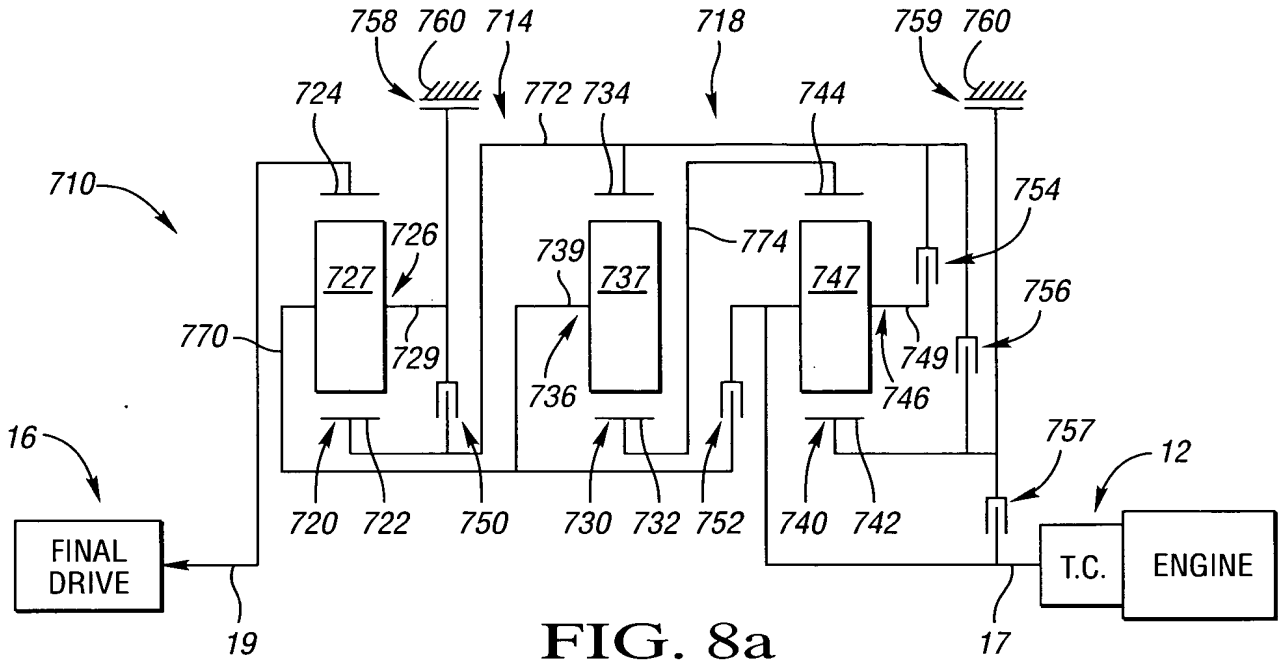


FIG. 8a

FIG. 8b

	RATIOS	750	752	754	756	757	758	759
REVERSE	-2.92			X			X	
NEUTRAL	0.00						X	
1	4.42					X	X	
2	2.96						X	X
3	1.99				X		X	
4	1.25				X			X
5	1.00		X		X			
6	0.90		X					X
7	0.79			X				X
8	0.67	X						X

(X = ENGAGED CLUTCH)

RING GEAR TOOTH RATIO:  $\frac{N_{R1}}{N_{S1}} = 2.97$ ,  $\frac{N_{R2}}{N_{S2}} = 1.51$ ,  $\frac{N_{R3}}{N_{S3}} = 2.03$

RATIO SPREAD	6.59
RATIO STEPS	
REV/1	-0.66
1/2	1.49
2/3	1.49
3/4	1.59
4/5	1.25
5/6	1.11
6/7	1.14
7/8	1.18



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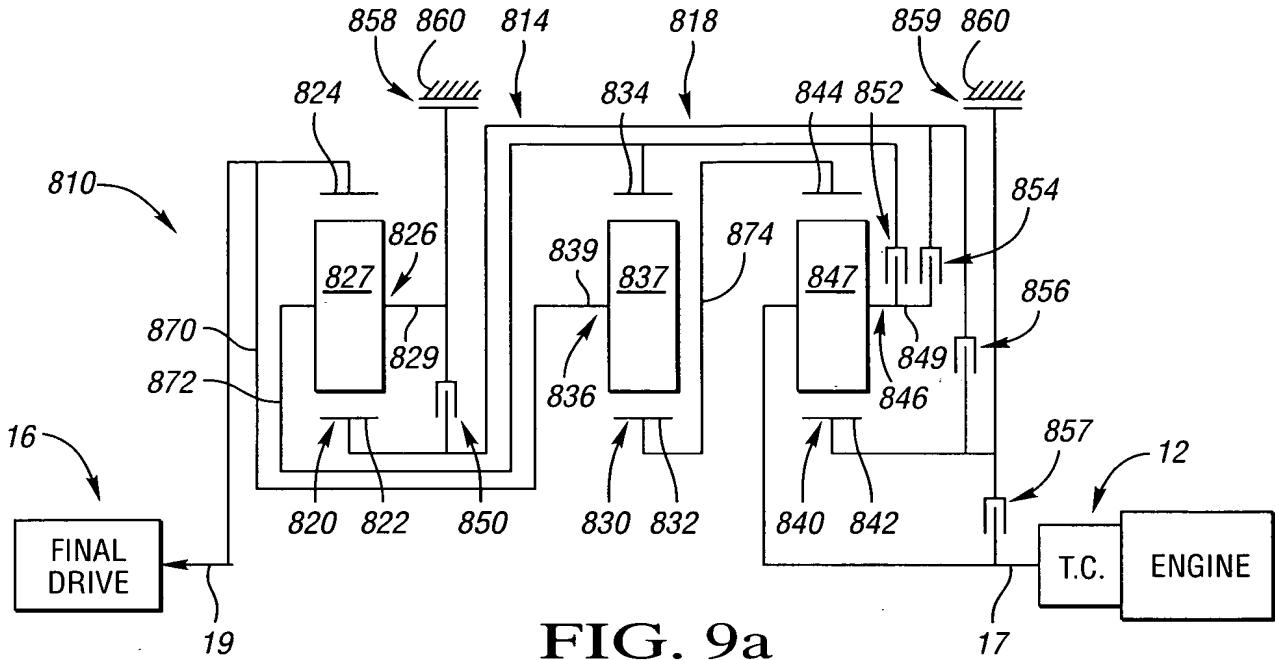


FIG. 9a

FIG. 9b

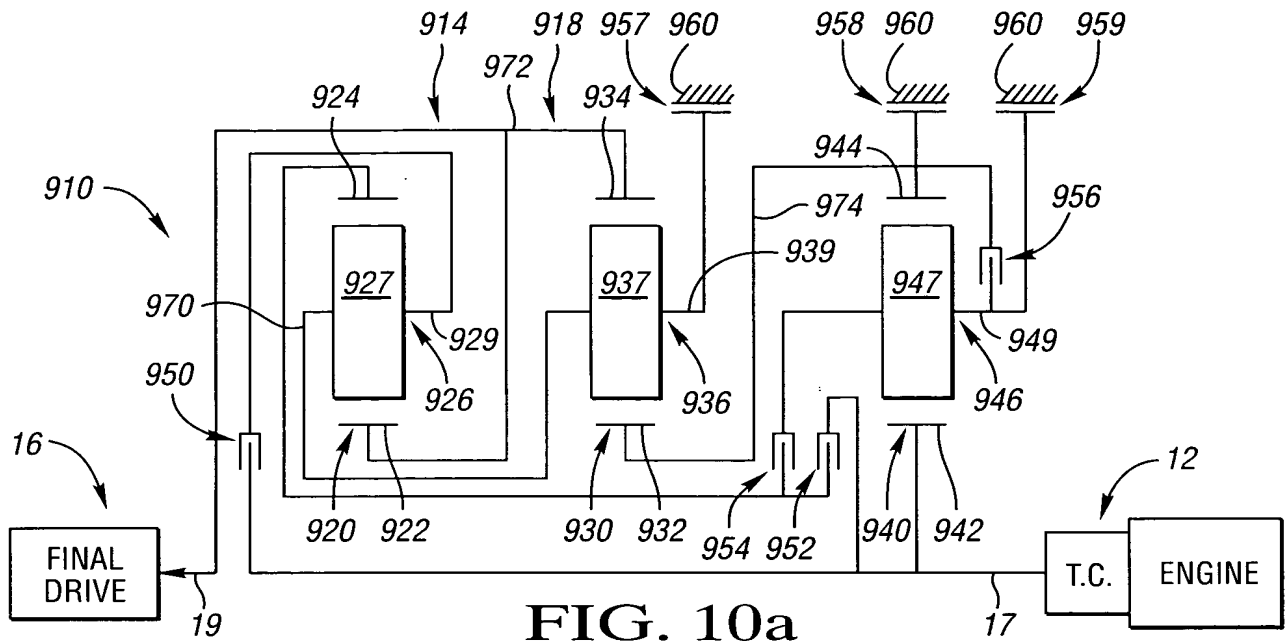
	RATIOS	850	852	854	856	857	858	859
REVERSE	-2.65			X			X	
NEUTRAL	0.00						X	
1	3.99					X	X	
2	2.77						X	X
3	1.96				X		X	
4	1.26				X			X
5	1.00		X		X			
6	0.90		X					X
7	0.81			X				X
8	0.69	X						X

(X = ENGAGED CLUTCH)

RING GEAR TOOTH RATIO:  $\frac{N_{R1}}{N_{S1}} = 2.65$ ,  $\frac{N_{R2}}{N_{S2}} = 2.98$ ,  $\frac{N_{R3}}{N_{S3}} = 2.27$

RATIO SPREAD	5.74
RATIO STEPS	
REV/1	-0.66
1/2	1.44
2/3	1.41
3/4	1.55
4/5	1.26
5/6	1.11
6/7	1.12
7/8	1.16

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**FIG. 10a**

**FIG. 10b**

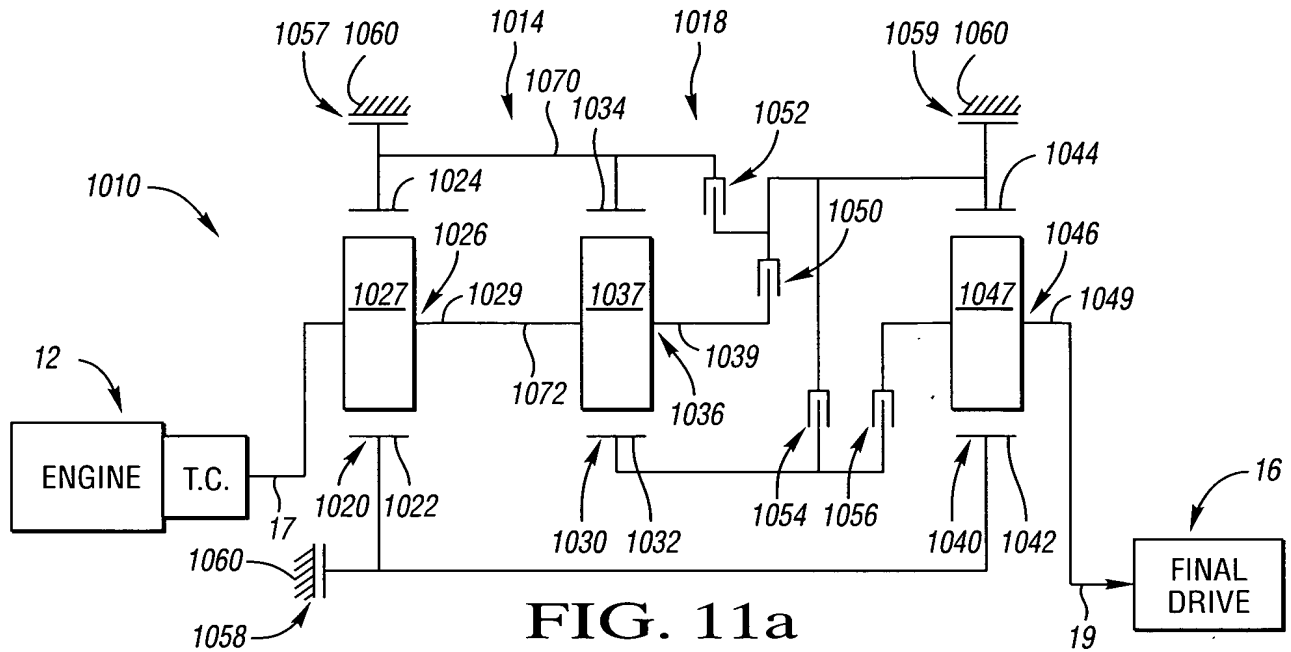
	RATIOS	950	952	954	956	957	958	959
REVERSE 2	-2.99				X	X		
REVERSE 1	-0.67		X			X		
NEUTRAL	0.00					X		
1	5.61					X		X
2	3.69			X		X		
3	2.62			X				X
4	1.68			X			X	
5	1.00	X		X				
6	0.75	X					X	
7	0.66	X						X
8	0.58		X				X	
9	0.48		X					X

(X = ENGAGED CLUTCH)

RING GEAR  
SUN GEAR TOOTH RATIO:  $\frac{N_{R1}}{N_{S1}} = 1.50$ ,  $\frac{N_{R2}}{N_{S2}} = 2.99$ ,  $\frac{N_{R3}}{N_{S3}} = 1.88$

RATIO SPREAD	11.78
RATIO STEPS	
REV2/1	-0.53
1/2	1.52
2/3	1.41
3/4	1.56
4/5	1.68
5/6	1.33
6/7	1.13
7/8	1.14
8/9	1.21

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**FIG. 11a**

**FIG. 11b**

	RATIOS	1050	1052	1054	1056	1057	1058	1059
REVERSE 2	-4.29				X			X
REVERSE 1	-1.57	X						X
NEUTRAL	0.00				X			
1	4.53				X		X	
2	2.72	X					X	
3	1.68			X			X	
4	1.21		X				X	
5	1.00		X	X				
6	0.68		X			X		
7	0.48			X		X		
8	0.37	X				X		
9	0.33				X	X		

(X = ENGAGED CLUTCH)

RING GEAR TOOTH RATIO:  $\frac{N_{R1}}{N_{S1}} = 2.65$ ,  $\frac{N_{R2}}{N_{S2}} = 1.67$ ,  $\frac{N_{R3}}{N_{S3}} = 1.50$

RATIO SPREAD	13.73
RATIO STEPS	
REV2/1	-0.95
1/2	1.67
2/3	1.63
3/4	1.38
4/5	1.21
5/6	1.46
6/7	1.41
7/8	1.30
8/9	1.12

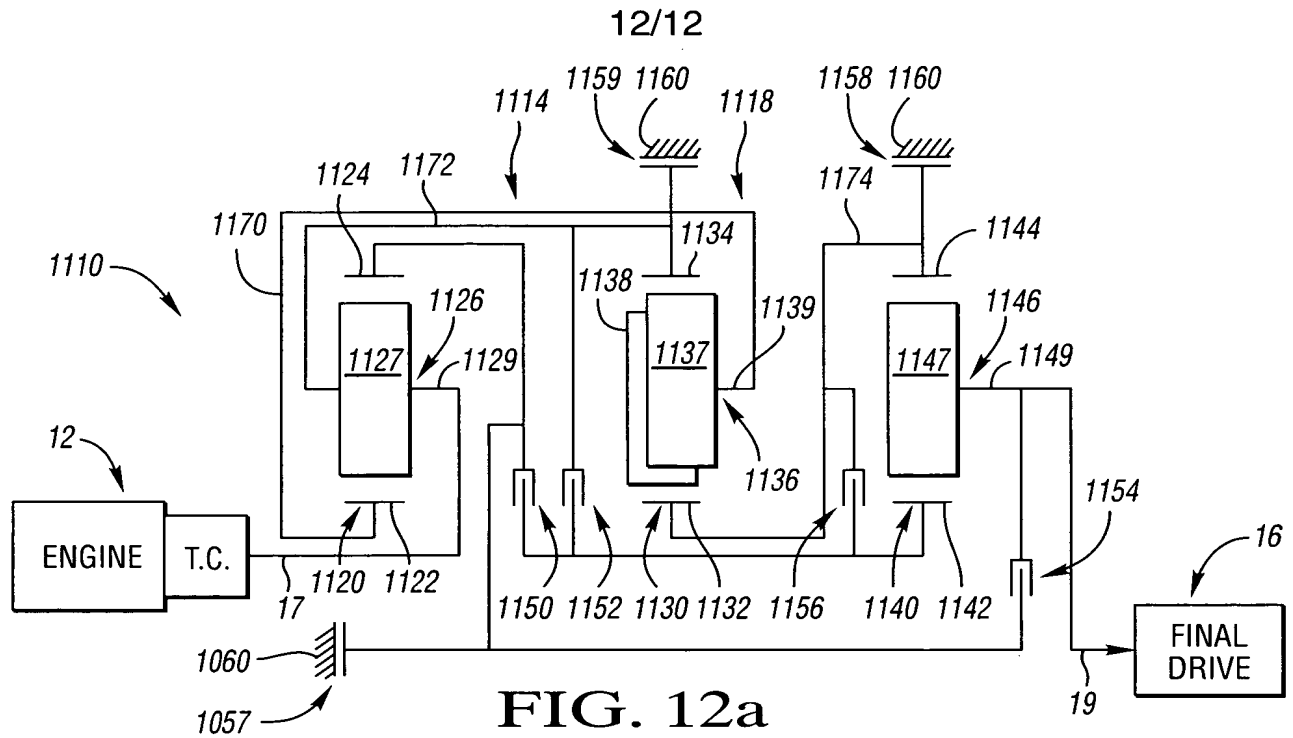


FIG. 12b

	RATIOS	1150	1152	1154	1156	1157	1158	1159
REVERSE 3	-2.08		X			X		
REVERSE 2	-1.14	X				X		
REVERSE 1	-0.68				X	X		
NEUTRAL	0.00						X	
1	4.21	X					X	
2	2.50		X				X	
3	1.68			X			X	
4	1.00	X		X				
5	0.62			X				X
6	0.52		X					X
7	0.46	X						X
8	0.40				X			X

(X = ENGAGED CLUTCH)

$\frac{\text{RING GEAR}}{\text{SUN GEAR}}$  TOOTH RATIO:  $\frac{N_{R1}}{N_{S1}} = 1.63$ ,  $\frac{N_{R2}}{N_{S2}} = 2.51$ ,  $\frac{N_{R3}}{N_{S3}} = 1.50$

RATIO SPREAD	10.56
RATIO STEPS	
REV3/1	-0.50
1/2	1.68
2/3	1.49
3/4	1.68
4/5	1.61
5/6	1.18
6/7	1.13
7/8	1.17